Patent claims

1.

A device for directionally guiding articles of different shapes that are being conveyed on a conveyor off the conveyor with the aid of a movable gate that is controllable to move across the conveyor at an angle to the direction of travel of the article on the conveyor,

characterised in

- that the gate is made having a means which, upon movement of the gate across the conveyor, is arranged to cause the article to forcibly be driven along the gate, in a direction corresponding to the said angle, off the conveyor and to an exit; and
- that the means consists of at least one motor-driven, rotatable disc, preferably equipped with a friction surface.

2.

A device as disclosed in claim 1,

characterised in

- that the means consists of two motor-driven, rotatable and parallel discs, preferably with friction surfaces, and rotating in the same rotational direction, wherein the space between the discs is greater than the largest cross-section of an article to be guided.

3.

A device as disclosed in claim 2,

characterised in

- that the means has a central position in which the two discs are parallel to the longitudinal direction of the conveyor and allow articles to pass unobstructed therebetween.

4.

A device as disclosed in claim 2 or 3,

characterised in

- that the two discs are driven by a common drive motor via a common drive shaft, and that the two discs are pivotable across the conveyor about a common pivot point located centrally above the conveyor.

5.
A device as disclosed in claim 1, 2, 3 or 4,
characterised in
- that said at least one disc has a non-vertical, preferably horizontal axis of rotation.

6.
A device as disclosed in claim 1, 2, 3 or 4,
characterised in
- that said at least one disc has a non-horizontal axis of rotation.

7.
A device as disclosed in one or more of claims 1-6,
characterised in
- that said means in connection with the gate is controllable to assume at least three angularly different positions relative to the conveyor.

8.
A device as disclosed in one or more of claims 1-7,
characterised in
- that said means is arranged to assume at least five angularly different positions relative to the conveyor.

9.
A device as disclosed in one or more of the preceding claims,
characterised in
- that said means has a working speed at which the means makes contact with the article that is a function of the angle which the gate forms with the direction of travel of the conveyor.

10.
A device as disclosed in one or more of claims 1-9,
characterised in
- that said means has a working speed at which the means makes contact with the article that is a function of the weight size and/or shape of the article.

11.
A device as disclosed in claim 9 or 10,
characterised in
- that the working speed of the means is a function of the working speed of the conveyor.

12.
A device as disclosed in claim 11,
characterised in
- that the working speed of the means is equal to or greater than the working speed of the conveyor.

13.
A device as disclosed in claim 11,
characterised in
- that the means is designed to cause the article to be given an accelerated movement off the conveyor.

14.
A device as disclosed in claim 8 or 9,
characterised in
- that the gate is cooperative with a flag device for detecting the angular position of the gate relative to the conveyor.

15.
A device as disclosed in claim 14,
characterised in
- that the flag device is optical, electromagnetic, capacitive or electromechanical.

16.
A device as disclosed in one or more of the preceding claims,
characterised in
- that the gate is designed, upon turning into a desired angular position, to cause, at the same time, movement of an auxiliary gate cooperative with the gate and positioned essentially parallel to the gate at a distance therefrom adapted to be able to pass the article through a space therebetween.

17.
A device as disclosed in one or more of the preceding claims,
characterised in
- that located upstream of the gate is a device for identifying or detecting any characteristic features or parameters that the article has.

18.
A device as disclosed in claim 17,
characterised in
- that the device is, on the basis of said identified or detected features or parameters, designed to control the gate to assume a desired angular position relative to the conveyor.

19.
A device as disclosed in claim 16 or 17,
characterised in
- that device is, on the basis of said identified or detected features or parameters, designed to control the working speed of the means relative to the working speed of the conveyor and/or the angular position of the gate.

20.
A device as disclosed in one or more of claims 1-19,
characterised in
- that the gate is designed to guide articles to said exit, wherein said exit is, with the aid of the controllable gate, selectable from among at least a first and a second exit.

21.
A device as disclosed in claim 20,
characterised in
- that at least one of said first and second exits is associated with an after-treatment unit for the article with subsequent storage container or conveyor.

22.
A device as disclosed in claim 21,
characterised in
- that said exit cooperates with a storage container.

23.
A device as disclosed in claim 21,
characterised in

- that the after-treatment unit is a compactor or a disintegrator.

24.
A device as disclosed in claim 21 or 23,
characterised in

- that the after treatment unit for said first and said second exit respectively are constructed differently, but are driven by a common drive unit.

25.
A device as disclosed in one or more of claims 1-24,
characterised in

- that it is designed for sorting articles in the form of empties, for example, bottles or cans.